Amendments to the Specification

Please replace paragraph 0006 beginning on page 3, line 6 with the following rewritten paragraph:

[0006] Figure 1 illustrates movement of cleaning fluids on a wafer 10 during an SRD drying process. In this drying process, a wet wafer is rotated at a high rate by rotation 14. In SRD, by use of centrifugal force, the water or cleaning fluid used to clean the wafer is pulled from the center of the wafer to the outside of the wafer and finally off of the wafer as shown by fluid directional arrows 16. As the cleaning fluid is being pulled off of the wafer, a moving liquid/gas interface 12 is created at the center of the wafer and moves to the outside of the wafer (i.e., the circle produced by the moving liquid/gas interface 12 gets larger) as the drying process progresses. In the example of Figure 1, the inside area of the circle formed by the moving liquid/gas interface 12 is free from the fluid and the outside area of the circle formed by the moving liquid/gas interface 12 is the cleaning fluid. Therefore, as the drying process continues, the section inside (the dry area) of the moving liquid/gas interface 12 increases while the area (the wet area) outside of the moving liquid/gas interface 12 decreases. As stated previously, if the moving liquid/gas interface 12 breaks down, droplets of the cleaning fluid form on the wafer and contamination may occur due to evaporation of the droplets. As such, it is imperative that droplet formation and the subsequent evaporation be limited to keep contaminants off of the wafer surface. Unfortunately, the present drying methods are only partially successful at the prevention of ~~moving liquid interface~~ moving liquid/gas interface breakdown.

Please replace paragraph 0051 beginning on page 18, line 8 with the following rewritten paragraph:

[0051] In one embodiment the arms 104 are configured to hold the proximity head 106a above the wafer and the proximity head 106b below the wafer in close proximity to the wafer. For example, in one exemplary embodiment this may be accomplished by having the

upper arm 104a and the lower arm 104b be movable in a vertical manner so once the proximity heads are moved horizontally into a location to start wafer processing, the proximity heads 106a and 106b can be moved vertically to a position in close proximity to the wafer. In another embodiment, the upper arm 104a and the lower arm 104b may be configured to start the proximity heads 106a and 106b in a position where a meniscus is generated before processing and the meniscus that has already been generated between the proximity heads 106a and ~~106~~ 106b may be moved onto the wafer surface to be processed from an edge area of a wafer 108. Therefore, the upper arm 104a and the lower arm 104b may be configured in any suitable way so the proximity heads 106a and 106b can be moved to enable wafer processing as described herein. It should also be appreciated that the system 100 may be configured in any suitable manner as long as the proximity head(s) may be moved in close proximity to the wafer to generate and control a meniscus. It should also be understood that close proximity may be any suitable distance from the wafer as long as a meniscus may be maintained. In one embodiment, the proximity heads 106a and 106b (as well as any other proximity head described herein) may each be located between about 0.1 mm to about 10 mm from the wafer to generate the fluid meniscus on the wafer surface. In a preferable embodiment, the proximity heads 106a and 106b (as well as any other proximity head described herein) may each be located ~~bout~~ about 0.5 mm to about 2.0 mm from the wafer to generate the fluid meniscus on the wafer surface, and in more preferable embodiment, the proximity heads 106a and 106b (as well as any other proximity head described herein) may be located about 1.5 mm from the wafer to generate the fluid meniscus on the wafer surface.

Please replace paragraph 0053 beginning on page 20, line 4 with the following rewritten paragraph:

[0053] In addition, besides processing the top and/or bottom surfaces of the wafer, the system 100 may also be configured to process one side of the wafer with one type of

process (e.g., etching, cleaning, drying, plating, etc.) and process the other side of the wafer using the same process or a different type of process by inputting and outputting different types of fluids or by using a different configuration meniscus. The proximity heads can also be configured to process the bevel edge of the wafer in addition to processing the top and/or bottom of the wafer. This can be accomplished by moving the meniscus off (or onto) ~~the edge the wafer which processes the bevel edge~~ the edge of the wafer to process the bevel edge. It should also be understood that the proximity heads 106a and 106b may be the same type of apparatus or different types of proximity heads.

Please replace paragraph 0057 beginning on page 22, line 5 with the following rewritten paragraph:

[0057] It should be appreciated that the inlets and outlets located on a face of the proximity head may be in any suitable configuration as long as a stable meniscus as described herein may be utilized. In one embodiment, the at least one N_2/IPA vapor inlet may be adjacent to the at least one vacuum outlet which is in turn adjacent to the at least one processing fluid inlet to form an IPA-vacuum-processing fluid orientation. It should be appreciated that other types of orientations such as IPA-processing fluid-vacuum, processing fluid-vacuum-IPA, vacuum-IPA-processing fluid, etc. may be utilized depending on the wafer processes desired and what type of wafer processing mechanism is sought to be enhanced. In a preferable embodiment, the IPA-vacuum-processing fluid orientation may be utilized to intelligently and powerfully generate, control, and move the meniscus located between a proximity head and a wafer to process wafers. The processing fluid inlets, the N_2/IPA vapor inlets, and the vacuum outlets may be arranged in any suitable manner if the above orientation is maintained. For example, in addition to the N_2/IPA vapor inlet, the vacuum outlet, and the processing fluid inlet, in an additional embodiment, there may be additional sets of IPA vapor ~~outlets~~ inlets, processing fluid inlets and/or vacuum outlets depending on the configuration of the proximity

head desired. It should be appreciated that the exact configuration of the IPA-vacuum-processing fluid orientation may be varied depending on the application. For example, the distance between the IPA input, vacuum, and processing fluid input locations may be varied so the distances are consistent or so the distances are inconsistent. In addition, the distances between the IPA input, vacuum, and processing fluid output may differ in magnitude depending on the size, shape, and configuration of the proximity head 106a and the desired size of a process meniscus (i.e., meniscus shape and size). In addition, exemplary IPA-vacuum-processing fluid orientation may be found as described in the United States Patent Applications referenced above.

Please replace paragraph 0060 beginning on page 24, line 17 with the following rewritten paragraph:

[0060] Figure 4A illustrates a wafer processing operation that may be conducted by a proximity head 106a in accordance with one embodiment of the present invention. Although Figure 4A shows a top surface 108a being processed, it should be appreciated that the wafer processing may be accomplished in substantially the same way for the bottom surface 108b of the wafer 108. In one embodiment, the inlet 302 may be utilized to apply isopropyl alcohol (IPA) vapor toward a top surface 108a of the wafer 108, and the inlet 306 may be utilized to apply a processing fluid toward the top surface 108a of the wafer 108. In addition, the outlet 304 may be utilized to apply vacuum to a region in close proximity to the wafer surface to remove fluid or vapor ~~that may located~~ that may be located on or near the top surface 108a. As described above, it should be appreciated that any suitable combination of inlets and outlets may be utilized as long as the meniscus 116 may be formed. The IPA may be in any suitable form such as, for example, IPA vapor where IPA in vapor form is inputted through use of a N_2 gas. Moreover, any suitable fluid used for processing the wafer (e.g., cleaning fluid, drying fluid, etching fluid, plating fluid, etc.) may be utilized that may enable or enhance the

wafer processing. In one embodiment, an IPA inflow 310 is provided through the inlet 302, a vacuum 312 may be applied through the outlet 304 and processing fluid inflow 314 may be provided through the inlet 306. Consequently, if a fluid film resides on the wafer 108, a first fluid pressure may be applied to the wafer surface by the IPA inflow 310, a second fluid pressure may be applied to the wafer surface by the processing fluid inflow 314, and a third fluid pressure may be applied by the vacuum 312 to remove the processing fluid, IPA and the fluid film on the wafer surface.

Please replace paragraph 0071 beginning on page 30, line 8 with the following rewritten paragraph:

[0071] In one embodiment, as described below, the housing module 401 may be configured to have at least one inlet (such as, for example, inlet 302) which can apply IPA/N_2 vapor to the surface of the wafer 108. When the housing module 401 includes the inlet 302, the process configuration insert 403 may include an inlet such as, for example, inlet 306 that can apply a processing fluid and an outlet such as, for example, outlet 304 that can remove the IPA/N_2 and the processing fluid from the surface of the wafer 108. In yet another embodiment, the housing module 401 does not contain any inlets and outlets while the process configuration insert 403 may include inlets 302 and 306 as well as outlets ~~306~~ 304.

Please replace paragraph 0073 beginning on page 31, line 3 with the following rewritten paragraph:

[0073] Therefore, in one embodiment, the process configuration insert 403 may be interchanged with another process configuration insert with a different inlet/outlet configuration in circumstances when a different meniscus configuration is desired. In such a fashion, depending on the process (e.g., cleaning, drying, etching, plating, etc.), a particular process configuration insert with particular inlet/outlet configurations may be utilized.

Consequently, in one embodiment, only the ~~process configuration insert configuration insert 403 need be changed~~ process configuration insert 403 needs to be change in the manifold 106' when a different meniscus configuration is desired. As a result, the multi-module manifold 106' may be easily reconfigured to generate a different meniscus configuration by changing the process configuration insert 403.

Please replace paragraph 0074 beginning on page 31, line 13 with the following rewritten paragraph:

[0074] The cover module 405 may be attached to both the process configuration insert 403 and the housing 401 to form the multi-module proximity head 106'. In one embodiment, the cover module may have a port 540 for inputting the processing fluid into the ~~multi-module 106'~~ multi-module manifold 106'. The cover module 405 may also include attachment openings that may extend through the cover module 405 so an attachment device such as, for example, a bolt, a screw, etc. may be inserted into the cover module 405 and into the housing module 401 (or into the process configuration insert 403 depending on the attachment opening) to enclose the process configuration insert 403 inside the multi-module proximity head 106'. It should be appreciated that the attachment openings may be created in any suitable fashion such as, for example, drilling, machining, etc. The cover module 405 is described in further detail in reference to Figure 6C.

Please replace paragraph 0077 beginning on page 33, line 1 with the following rewritten paragraph:

[0077] In one embodiment, a portion of the multi-module proximity head 106' may preferably have the proximity face 407 as a raised region 409 where the inlets 302 and 306 as well as outlets ~~306~~ 304 are located. It should be appreciated that the raised region 409 may

be raised any suitable amount of height from a surrounding surface 413 as long as the meniscus generated within the raised region 409 does not attach to the surrounding surface 413 through surface tension. In one embodiment, by having the region with the inlets 302 and 306 and outlets 304 being raised, the meniscus may be made more manageable. This increased manageability may occur because the surface of the multi-module proximity head 106' without the inlets and outlets may be located farther away from the surface area of the multi-module proximity head 106' with the inlets and outlets. Therefore, the surface of the multi-module proximity head 106' surrounding the meniscus is less accessible to surface tension attachment by the meniscus.

Please replace paragraph 0080 beginning on page 34, line 3 with the following rewritten paragraph:

[0080] Figure 6A illustrates a housing module 401 in accordance with one embodiment of the present invention. It should be appreciated that the housing module 401 may be any suitable configuration that would enable the process configuration insert 403 to be inserted into the housing module 401. In one embodiment, the housing module has a first end and a second end where an opening exists in the first surface of the first ~~end~~ and the second surface of the second end. The housing module may also have an internal opening connecting to the openings in the first surface and the second surface. In such an embodiment, the process configuration insert 403 may be defined in the internal opening such that the insert surface resides in the opening of the first surface. Although exemplary configurations of the housing module 401 are shown, it should be appreciated the configuration of the housing module 401 may differ depending on the configuration of the process configuration insert 403. For example, if the process configuration insert 403 was square in configuration, the passage in the housing module 401 may be square so as to accommodate the process configuration insert 403.

Please replace paragraph 0083 beginning on page 35, line 7 with the following rewritten paragraph:

[0083] Figure 6B illustrates a process configuration insert 403 in accordance with one embodiment of the present invention. It should be appreciated that the process configuration insert 403 may have any suitable configuration of inlets and outlets so when combined with the housing 401, the fluid meniscus may be generated. In one embodiment, the process configuration insert 403 includes at least one inlet 306 and at least one outlet 304. The process configuration insert 403 may also include a ridge 440 which can prevent the process configuration insert 403 from being inserted too far into the housing module 401. The process configuration insert 403 may also include an indented portion 420. The indented portion 420 may exist to generate an insert portion 410 which is larger in circumference than the indented portion 420. The process configuration insert 403 may also include a base 430 which is a portion of the process configuration insert 403 below the indented portion 420. The insert portion 410 may include the at least one inlet 306 and the at least one outlet 304 on an insert surface 413. In one embodiment, the outlet 304 may be connected to passage(s) defined within the process configuration insert that extend from one end of the portion 410 to another end of the insert portion 410 so fluid may pass from one side of the insert portion 410 to the other side. The inlet 306 may be connected to passage(s) defined within the process configuration insert 403 extending from insert surface 413 to an opening in the base 430. Therefore, fluid to be expelled by the at least one inlet 306 may be received from the opening in the base 430 and be transmitted through passage(s) inside the process configuration insert ~~430~~ 403 to reach the at least one inlet 306. The base 430 may include opening(s)/passage(s) through which fluids may be pass to and from the cover module 405.

Please replace paragraph 0084 beginning on page 36, line 6 with the following rewritten paragraph:

[0084] Figure 6C illustrates a cover module 405 in accordance with one embodiment of the present invention. In one embodiment, the cover module 405 includes O-rings 470 and 490 as well as a fluid passage 480 and attachment openings 460 and 446. The O-ring 470 may be configured to seal the fluid passage 480 (when the cover module 405, process configuration insert 403 and the housing module 401 are combined to form the multi-module proximity head 106') so fluid from the fluid passage 480 does not leak into other areas of the multi-module proximity head 106'. In one embodiment, the O-ring 470 may provide a seal so fluid flows from the passage 480 to a passage 564 (as discussed in reference to Figure 7B) without leakage of fluid into other regions of the multi-module proximity head 106'. The O-ring 490 may be utilized to seal an internal space 574 (as discussed in reference to Figure 7C) so fluid within the internal space 574 does not leak out of the multi-module proximity head 106'. ~~The internal space 574 may also be known as a p~~

Please replace paragraph 0091 beginning on page 38, line 10 with the following rewritten paragraph:

[0091] The process configuration insert 403 may also include a passage 564 which may receive fluid from the passage 480 (as shown in Figure 6C). In one embodiment the passage 564 may ~~move through the process~~ move fluid through the process configuration insert 403 to the inlets 306. Therefore, fluid may travel from the passage 480 to the passage 564 to the inlets 306.

Please replace paragraph 0093 beginning on page 39, line 1 with the following rewritten paragraph:

[0093] In addition, the housing module 401 may include an internal space 574 which may house the process configuration insert 403. In one embodiment the side of the process configuration insert 403 with the insert portion 410 (as shown in Figure 7B and 6B) is

inputted into the internal opening of the ~~housing 401~~ housing module 401. In this fashion, the process configuration insert 403 may be defined within the ~~housing 401~~ housing module 401 such that the resulting structure may be capable of forming a fluid meniscus as discussed herein.

Please replace paragraph 0094 beginning on page 39, line 7 with the following rewritten paragraph:

[0094] Figure 8 shows a side view of the multi-module proximity head 106' illustrating fluid passages in accordance with one embodiment of the present invention. In one embodiment, the multi-module proximity head 106' includes the cover module 405 that has a port ~~504~~ 540 through which fluid may be transmitted by internal passage(s) to the inlet 306. The multi-module proximity module 106' may include a port 408 which can supply the inlets 302 with IPA/N_2. Vacuum may be applied to the outlets 304 to remove fluids from a wafer surface when the multi-module proximity module 106' is in operation.

Please replace paragraph 00104 beginning on page 43, line 19 with the following rewritten paragraph:

[00104] It should be understood that the interface membranes 602 and 602' may be any suitable thickness as long as the interface membranes 602 and 602' can at least partially prevent fluid from ~~moving through the are being blocked~~ moving through the portions being blocked. It should be appreciated that the interface membranes 602 and 602' may also be partially permeable thereby decreasing fluid flow through the blocked area.

Please replace paragraph 00106 beginning on page 44, line 7 with the following rewritten paragraph:

[00106] Figure 10B illustrates an application of an interface membrane 602 between a manifold cover 608 and a manifold head 610 in accordance with one embodiment of

the present invention. In the embodiment shown in Figure 10B, the interface membrane 602 may be attached to the manifold head to cover portions of the manifold head 610 where fluid would flow from the manifold cover 608 to the manifold head 610 and where fluid would flow from the manifold head 610 to the manifold cover 608. Therefore, the portions of the fluid passages that supply the fluid to the meniscus and/or remove the fluid from the meniscus are blocked. Therefore, when fluid is cutoff from the meniscus, that portion of the meniscus with reduced fluid may be made smaller. In contrast, when the fluid removal from the meniscus is blocked, meniscus size may be increased. Once the interface membrane 602 has been attached, the manifold head 610 and the manifold cover 608 may be attached to form the omni-usage manifold ~~106"~~ 606". It should be appreciated that the omni-usage manifold ~~106"~~ 606" is depicted as two piece apparatus only for exemplary purposes and the omni-usage manifold ~~106"~~ 606" may include any suitable number of pieces such as, for example, 1, 2, 3, 4, 5, 6, etc. It should also be understood that the interface membrane 602 may be located in any suitable ~~located~~ location that may block fluid transport and therefore could be on or between any suitable piece of a multi-piece omni-usage manifold.

Please replace paragraph 00107 beginning on page 45, line 1 with the following rewritten paragraph:

[00107] Figure 10C depicts an interface membrane 602 that has been applied to the manifold head 610 in accordance with one embodiment of the present invention. The interface membrane 602 has been attached to the manifold head 610 so that at least a portion of the inlet/outlet that supplies and removes the fluid from the manifold head 610 is blocked. Therefore, the portion(s) of the meniscus that would typically be formed as a result of fluid transportation into the area is eliminated. ~~It should also be understood that~~

Please replace paragraph 00109 beginning on page 45, line 10 with the following rewritten paragraph:

[00109] Figure 10D illustrates an interface membrane 602 applied to a process surface of the manifold head 610 in accordance with one embodiment of the present invention. In one embodiment, the interface membrane 602 is attached so at least a portion of the inlets 302 and 306 and outlet 304 located on the process surface is covered. It should be appreciated that the process surface is an area of a surface of the manifold head where the inlets 302 and 306 as well as outlet ~~306~~ 304 is located.